

During development of the Apollo spacecraft, researchers found a severe vibration problem in an early version of the spacecraft's guidance system. The problem was traced to a plastic compound encapsulating the system's electronics; it did not absorb sufficient energy to dampen vibrations.

Arthur C. Metzger, then NASA's resident manager at Massachusetts Institute of Technology, discovered a better compound, a very elastic type of plastic that literally soaked up energy and, in addition to its vibration-damping ability, offered extraordinary potential as a noise abatement material. After his retirement from NASA, Metzger founded a company to develop and market the compound and associated products, a line of noise-deadening adhesives, sheets, panels and enclosures.

These materials are known as SMART® products (for Sound Modification and Regulated Temperature) and Metzger's firm is SMART Products Company, Inc., Framingham, Massachusetts. The company is finding scores of applications for its acoustic materials at a time when environment laws and labor union insistence are making it

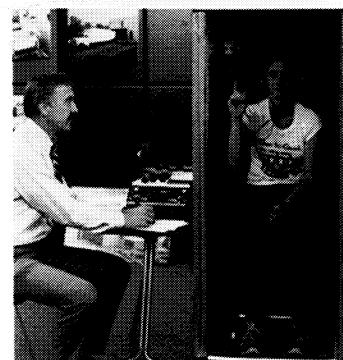
necessary for many firms to institute noise abatement measures. SMART products, 75 to 80 percent lighter than traditional soundproofing materials, have demonstrated high degrees of effectiveness. For example, an independent laboratory test that compared a comparable product with a SMART acoustical vibration damping pad for the American Motors Alliance auto showed that the SMART pad produced 15 percent better performance at 75 percent lower weight. Last year, American Motors introduced SMART pad on production Alliances and SMART Products licensed the Sanbree/Renault Corporations as worldwide sales agents for transportation applications.

The photos illustrate two recent applications in other areas. Varian/Extrion Division of Varian Associates, Danvers, Massachusetts fabricates enclosures for high voltage terminals and other electronic system components. The work demanded considerable sanding and grinding in an open "snagging" area where employees were exposed to extremely high noise levels. Richard



Sheppard, Varian's safety administrator, sought help from SMART Products in creating individual, less noisy work cells for the snaggers. Above, Sheppard displays the result: a work cell enclosed by a series of panels that incorporate SMART compound; the panels not only sharply reduce noise, they offer flexibility in that they are mounted on overhead tracks and can be shifted to vary the number and size of the cells as workload dictates.

SMART Products also manufactures audiometric test booths for industrial firms that must comply with a federal regulation requiring periodic hearing tests for employees who are consistently subjected to high noise levels. Easter Seal Center, Waterbury, Connect-



icut wanted a lightweight, portable booth that could be taken on the road to conduct the tests in factories. In the above photo, audiologist Thomas J. Kisatsky is conducting a hearing test using the SMART Micro One Minni Booth, which can be quickly disassembled and reassembled and is easily transportable. ▲

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